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### 1 [Session 4: Workflow performance and scalability analysis using the layered queuing modeling methodology](#)

Kwang-Hoon Kim, Clarence A. Ellis

September 2001 **Proceedings of the 2001 International ACM SIGGROUP Conference on Supporting Group Work**

Full text available: pdf(361.96 KB)

[Additional Information: full citation, abstract, references, citings, index terms](#)

The design and implementation of a workflow management system is typically a large and complex task. Decisions need to be made about the hardware and software platforms, the data structures, the algorithms, and network interconnection of various modules utilized by various users and administrators. These decisions are further complicated by requirements such as flexibility, robustness, modifiability, availability, performance, and usability. As the size of workflow systems increases, organizatio ...

**Keywords:** architectural framework, architectural performance analysis, architectural quality attribute, hardware contention model, method of layer (MOL), performance, performance analytic model, scalability, software contention model, taxonomy of workflow architectures

### 2 [Constraints: An approach to engineer and enforce context constraints in an RBAC environment](#)

Gustaf Neumann, Mark Strembeck

June 2003 **Proceedings of the eighth ACM symposium on Access control models and technologies**

Full text available: pdf(377.68 KB)


[Additional Information: full citation, abstract, references, citings, index terms](#)

This paper presents an approach that uses special purpose RBAC constraints to base certain access control decisions on context information. In our approach a *context constraint* is defined as a dynamic RBAC constraint that checks the actual values of one or more contextual attributes for predefined conditions. If these conditions are satisfied, the corresponding access request can be permitted. Accordingly, a *conditional permission* is an RBAC permission which is constrained by one o ...

3

### [E-services: a look behind the curtain](#)

Richard Hull, Michael Benedikt, Vassilis Christophides, Jianwen Su  
June 2003 **Proceedings of the twenty-second ACM SIGMOD-SIGACT-SIGART  
symposium on Principles of database systems**

Full text available:  pdf(269.51 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The emerging paradigm of electronic services promises to bring to distributed computation and services the flexibility that the web has brought to the sharing of documents. An understanding of fundamental properties of e-service composition is required in order to take full advantage of the paradigm. This paper examines proposals and standards for e-services from the perspectives of XML, data management, workflow, and process models. Key areas for study are identified, including behavioral servi ...

#### 4 Computing curricula 2001

September 2001 **Journal on Educational Resources in Computing (JERIC)**

Full text available:  pdf(613.63 KB)  html(2.78 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

#### 5 Logic based modeling and analysis of workflows

Hasan Davulcu, Michael Kifer, C. R. Ramakrishnan, I. V. Ramakrishnan


May 1998 **Proceedings of the seventeenth ACM SIGACT-SIGMOD-SIGART symposium  
on Principles of database systems**

Full text available:  pdf(1.23 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

#### 6 Session2: Beyond workflow management: product-driven case handling

W. M. P. van der Aalst, P. J. S. Berens

September 2001 **Proceedings of the 2001 International ACM SIGGROUP Conference on  
Supporting Group Work**

Full text available:  pdf(287.45 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


In the last decade, workflow technology has become one of the building blocks for realizing enterprise information systems. Unfortunately, the application of contemporary workflow management systems is limited to well-defined and well-controlled environments. In practice, workflow technology often fails because of limited flexibility. We advocate a paradigm shift to overcome this problem: Workflows should not be driven by pre-specified control-flows but by the products they generate. This paper ...

**Keywords:** FLOWer, case handling, product-driven design, workflow management, workflow management systems

#### 7 A generic model for reflective design

Panagiotis Louridas, Pericles Loucopoulos

April 2000 **ACM Transactions on Software Engineering and Methodology (TOSEM),  
Volume 9 Issue 2**

Full text available:  pdf(304.45 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)


Rapid technological change has had an impact on the nature of software. This has led to new exigencies and to demands for software engineering paradigms that pay particular attention to meeting them. We advocate that such demands can be met, at least in large parts, through the adoption of software engineering processes that are founded on a reflective stance. To this end, we turn our attention to the field of Design Rationale. We

analyze and characterize Design Rationale approaches and s ...

**Keywords:** design aids, design rationale, development, participative, reflective

8 PRIME—toward process-integrated modeling environments: 1

Klaus Pohl, Klaus Weidenhaupt, Ralf Dömges, Peter Haumer, Matthias Jarke, Ralf Klamma  
October 1999 **ACM Transactions on Software Engineering and Methodology (TOSEM)**,  
Volume 8 Issue 4

Full text available:  pdf(1.15 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#),  
[review](#)

Research in process-centered environments (PCEs) has focused on project management support and has neglected method guidance for the engineers performing the (software) engineering process. It has been dominated by the search for suitable process-modeling languages and enactment mechanisms. The consequences of process orientation on the computer-based engineering environments, i.e., the interactive tools used during process performance, have been studied much less. In this article, we prese ...

**Keywords:** PRIME, method guidance, process modeling, process-centered environments, process-integrated environments, process-sensitive tools, tool integration, tool modeling

9 Access control mechanisms for inter-organizational workflow

Myong H. Kang, Joon S. Park, Judith N. Froscher  
May 2001 **Proceedings of the sixth ACM symposium on Access control models and technologies**

Full text available:  pdf(253.16 KB)


Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

As more businesses engage in globalization, inter-organizational collaborative computing grows in importance. Since we cannot expect homogeneous computing environments in participating organizations, heterogeneity and Internet-based technology are prevalent in inter-organizational collaborative computing environments. One technology that provides solutions for data sharing and work coordination at the global level is inter-organizational workflow. In this paper, we investigate the access co ...

**Keywords:** access control, enterprise, organizational security, security, workflow

10 Requirements interaction management

William N. Robinson, Suzanne D. Pawlowski, Vecheslav Volkov  
June 2003 **ACM Computing Surveys (CSUR)**, Volume 35 Issue 2

Full text available:  pdf(1.24 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Requirements interaction management (RIM) is the set of activities directed toward the discovery, management, and disposition of critical relationships among sets of requirements, which has become a critical area of requirements engineering. This survey looks at the evolution of supporting concepts and their related literature, presents an issues-based framework for reviewing processes and products, and applies the framework in a review of RIM state-of-the-art. Finally, it presents seven researc ...

**Keywords:** KAOS, KATE, Oz, Requirements engineering, Telos, WinWin, analysis and design, composite system, deficiency driven design, dependency analysis, distributed intentionality, interaction analysis, software cost reduction (SCR), system architecture, system specification, viewpoints

**11 Persistent storage for a workflow tool implemented in Smalltalk**

Bob Beck, Steve Hartley

October 1994 **ACM SIGPLAN Notices , Proceedings of the ninth annual conference on Object-oriented programming systems, language, and applications**, Volume 29 Issue 10Full text available:  pdf(1.74 MB)Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper describes a new workflow model and its implementation in Smalltalk. The paper also details problems with using a RDBMS as the persistent store for the workflow tool and the subsequent experiences in using an ODBMS for this purpose. The final solution was a coexistence approach, using the RDBMS for legacy corporate data and the ODBMS for the process description and workflow status data.

**12 Workflow enactment with continuation and future objects**

Dragos A. Manolescu


November 2002 **ACM SIGPLAN Notices , Proceedings of the 17th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications**, Volume 37 Issue 11Full text available:  pdf(322.59 KB)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

An increasing number of software developers are turning to workflow to separate the logic and the control aspects in their applications, thus making them more amenable to change. However, in spite of recent efforts to standardize and provide reusable workflow components, many developers build their own. This is a challenging endeavor and involves solving problems which seem incompatible with the object paradigm and current object-oriented programming languages. In the context of an object-orient ...

**Keywords:** continuations, future objects, micro-workflow, trampolined style, workflow

**13 Cloning-based context-sensitive pointer alias analysis using binary decision diagrams**

John Whaley, Monica S. Lam

June 2004 **ACM SIGPLAN Notices , Proceedings of the ACM SIGPLAN 2004 conference on Programming language design and implementation**, Volume 39 Issue 6Full text available:  pdf(277.87 KB)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This paper presents the first scalable context-sensitive, inclusion-based pointer alias analysis for Java programs. Our approach to context sensitivity is to create a clone of a method for every context of interest, and run a *context-insensitive* algorithm over the expanded call graph to get *context-sensitive* results. For precision, we generate a clone for every acyclic path through a program's call graph, treating methods in a strongly connected component as a single node. Normally ...

**Keywords:** Datalog, Java, binary decision diagrams, cloning, context-sensitive, inclusion-based, logic programming, pointer analysis, program analysis, scalable

**14 Specification and implementation of exceptions in workflow management systems**

Fabio Casati, Stefano Ceri, Stefano Paraboschi, Giuseppe Pozzi

September 1999 **ACM Transactions on Database Systems (TODS)**, Volume 24 Issue 3Full text available:  pdf(250.40 KB)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Although workflow management systems are most applicable when an organization follows


standard business processes and routines, any of these processes faces the need for handling exceptions, i.e., asynchronous and anomalous situations that fall outside the normal control flow. In this paper we concentrate upon anomalous situations that, although unusual, are part of the semantics of workflow applications, and should be specified and monitored coherently; in most real-life applica ...

**Keywords:** active rules, asynchronous events, exceptions, workflow management systems

15 A reference model for workflow application development processes

Mathias Weske, Thomas Goesmann, Roland Holten, Rüdiger Striemer

March 1999 **ACM SIGSOFT Software Engineering Notes , Proceedings of the international joint conference on Work activities coordination and collaboration**, Volume 24 Issue 2

Full text available:  pdf(1.39 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


The success of workflow projects to a large extent depends on how workflow application development processes are planned, organized, and conducted. Based on lessons learned from problems encountered during real-world workflow application development projects, this paper presents a reference model for workflow application development processes, which guides project managers and developers through the complex structure of these processes, with the aim of developing more adequate, usable, and reliable ...

**Keywords:** design methodology, reference modeling, workflow application development processes

16 Intriguing technology from OOPSLA: Architecture and design of adaptive object-models

Joseph W. Yoder, Federico Balaguer, Ralph Johnson

December 2001 **ACM SIGPLAN Notices**, Volume 36 Issue 12

Full text available:  pdf(1.52 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Many object-oriented information systems share an architectural style that emphasizes flexibility and run-time adaptability. Business rules are stored externally to the program such as in a database or XML files instead of in code. The object model that the user cares about is part of the database, and the object model of the code is just an interpreter of the users' object model. We call these systems "Adaptive Object-Models", because the users' object model is interpreted at runtime and can be ...

**Keywords:** adaptive object-model, adaptive systems, dynamic object-model, meta-architectures, metadata, patterns, reflection, reflective systems meta-modeling

17 Development of a library for reusable workflow objects

Andreas Hofmann

April 1997 **ACM SIGGROUP Bulletin**, Volume 18 Issue 1

Full text available:  pdf(638.07 KB)

Additional Information: [full citation](#), [abstract](#), [index terms](#)

In the field of office automation technical machines and methods are used to make the workflows in the office more efficient and simple. One new method sets the focus on the optimization of the whole working process rather than on the optimization of a single function: Business Process Modeling or Workflow Modeling. Such processes, that are influencing the financial result of the whole company can be called "profit critical jobs". To achieve the aim of process optimization some tasks have to be ...

**18 Organizational engineering (OE): An integrated model of workflows, e-contracts and solution implementation**


Mizuho Iwaihara, Haiying Jiang, Yahiko Kambayashi

March 2004 **Proceedings of the 2004 ACM symposium on Applied computing**Full text available:  pdf(118.13 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Electronic-contracts (e-contracts) are structured models of business contracts. Business transactions between enterprises can be supported by inter-workflows based on standards. However, exceptions, namely problematic situations whose solutions are not specified in the workflow design, are not well supported in the proposed models. Such exceptions need to be resolved observing e-contracts. Discussion and decision-making by participants are necessary for interpreting e-contracts and agreeing on a ...

**Keywords:** business process, e-contract, workflows**19 Modeling document-mediated interaction**

William Hart-Davidson

October 2002 **Proceedings of the 20th annual international conference on Computer documentation**Full text available:  pdf(313.55 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Current approaches to modeling texts create text structures based on semantic representations of authorial intention or a pre-determined information structure. This paper considers an alternative to these two approaches - modeling document-mediated interaction - and discusses challenges associated with this alternative approach.

**Keywords:** activity theory, document modeling, human-computer interaction, technical communication**20 On formal requirements modeling languages: RML revisited**

Sol Greenspan, John Mylopoulos, Alex Borgida

May 1994 **Proceedings of the 16th international conference on Software engineering**Full text available:  pdf(1.72 MB) Additional Information: [full citation](#), [references](#), [citations](#)

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